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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,839	07/30/2003	Howard G. Pinder	A-9158	4740

5642 7590 05/23/2006

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EXAMINER	
CHAI, LONGBIT	

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/629,839	PINDER ET AL.	
	Examiner	Art Unit	
	Longbit Chai	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Original application contained claims 1 – 20. Claim 7 has been amended in an amendment filed on 4/24/2006. The amendment filed have been entered and made of record. Presently, pending claims are 1 – 20.

Response to Arguments

1. Applicant's arguments with respect to the subject matter of the instant claims have been fully considered but are not persuasive.

2. As per claim 1, Applicant asserts that "if Unger teaches that only critical packets are encrypted, it does not teach passing packets of the clear stream through a multiplexer, wherein the at least one critical packet is identified in the packets of the clear stream, the critical packet of the clear stream drops and the scramble critical packets included in the first and second encryption streams pass (Remarks: Page 10 Last Para)". Examiner respectfully disagrees – This requires the understanding of Unger reference on Table 1 and Figure 6 that presents the disclosure of partial dual-encryption, where each program packet is partially encrypted (i.e. only one out of nine packet streams as indicated in Table 1 identified as the critical packet) and when encryption is needed, the first and the second encryptions are applied on the same critical packet (for the purpose of managing legacy and non-legacy system A and B respectively) prior to the multiplexing and transmissions. Therefore, Unger teaches not only critical packets are encrypted but also passing packets of the clear stream through

a multiplexer (Unger: Figure 6 and Para [0058] Line 13 – 16), wherein the at least one critical packet is identified in the packets of the clear stream (Unger: Para [0080]), the critical packet of the clear stream drops and the scramble critical packets included in the first and second encryption streams pass (Unger: Table 1 and Figure 6 and Para [0058] Line 13 – 16: Examiner notes each packet stream is multiplexed and transmitted either in the form of clear stream or encryption stream as indicated in the Table 1 and thus when critical packet is identified the clear stream must drop and the scramble critical packets included in the first and second encryption streams must pass to the multiplex for transmission).

3. As per claim 7, Applicant asserts that "Unger only encrypts the critical packets. The first encrypted stream in Unger does not correspond to the clear stream. It only corresponds to the critical packets of the clear stream (Remarks: Page 12 Last Para)". Examiner respectfully disagrees. The first encrypted stream in Unger does correspond to the clear stream, as indicated by Table 1, when critical packet is identified, the clear stream of identified critical packet is dual-encrypted that meets the claim limitations "upon identification of the at least one critical packet of the clear stream (Unger: Para [0080]), provides the partial dual-encrypted stream including non-critical packets of the clear stream (Unger: Table 1 – i.e. for example, the critical packet of program 1 is dual-encrypted (EA & EB) and multiplexed with non-critical packets of the clear stream from program 2 – 8 as shown in Table 1), a critical packet of the first encrypted stream, and a remapped critical packet of the second encrypted stream (Unger: Para [0084] Line 5 –

10: each packet upon multiplexing needs to be time-aligned prior to multiplexing and transmission).

4. As per claim 14, Applicant asserts that "Unger fails to teach packets associated with the clear stream pass to a multiplexer and encrypted packets associated with the first encrypted stream drop, and wherein subsequent to identification, packets associated with the clear stream pass to a second scrambler and encrypted packets associated with the first encrypted stream pass to the multiplexer, wherein the second scrambler provides a second encrypted stream to the multiplexer; and multiplexing non-critical packets associated with the clear stream and the encrypted critical packets associated with the first and second encrypted streams to provide a partial dual-encrypted stream (Remarks: Page 14, 3rd Para)". Examiner respectfully disagrees because Unger does teach the claim limitations – identifying the at least one critical packet associated with the clear stream (Unger: Para [0080]), wherein prior to identification, packets associated with the clear stream pass to a multiplexer (Unger: Table 1 and Figure 6 & Para [0058] Line 13 – 16) and encrypted packets associated with the first encrypted stream drop (Unger: Table 1 and Figure 6 and Para [0058] Line 13 – 16: Examiner notes each packet stream is multiplexed and transmitted either in the form of clear stream or encryption stream as indicated in the Table 1 and thus prior to identification of the critical packet, the encrypted packets associated with the first encrypted stream must drop), and wherein subsequent to identification (Unger: Para [0080]), packets associated with the clear stream pass to a second scrambler (Unger: Table 1 – i.e. this is because the critical packet of program 1 is dual-encrypted not only

EA but also EB (Encryption for System B)) and encrypted packets associated with the first encrypted stream pass to the multiplexer, wherein the second scrambler provides a second encrypted stream to the multiplexer (Unger: Table 1 and Figure 6 and Para [0058] Line 13 – 16: Examiner notes each packet stream is multiplexed and transmitted either in the form of clear stream or encryption stream as indicated in the Table 1 and, for example, the critical packet of program 1 is dual-encrypted (EA & EB) and multiplexed with non-critical packets of the clear stream from program 2 – 8 as shown in Table 1) and multiplexing non-critical packets associated with the clear stream and the encrypted critical packets associated with the first and second encrypted streams to provide a partial dual-encrypted stream (Unger: Para [0084] Line 5 – 10: each packet upon multiplexing needs to be time-aligned prior to multiplexing and transmission).

5. With respect to claims 16 and 17, see the same reasons as that set forth above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraph of 35 U.S.C. 102 that forms the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 5, 7 – 9 and 14 – 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Unger et al. (U.S. Patent 2003/0026423).

As per claim 1, Unger teaches a method for providing an encrypted transport stream, the method comprising the steps of:

receiving a clear stream, the clear stream including a plurality of programs, each program comprising a plurality of packets each having a packet identifier (PID), wherein at least one of the plurality of packets is designated a critical packet (Unger: Para [0080] and [0084]);

scrambling the clear stream according to a first encryption method to provide a first encryption stream (Unger: Figure 6 and Para [0056] & Table 1);

scrambling the clear stream according to a second encryption method to provide a second encryption stream (Unger: Figure 6 and Para [0056] & Table 1);

aligning in time the clear stream, the first encryption stream, and the second encryption stream (Unger: Figure 6 and Para [0056], [0084] & Table 1);

passing packets of the clear stream through a multiplexer, wherein when the at least one critical packet is identified in the packets of the clear stream, the critical packet of the clear stream drops and the scrambled critical packets included in the first and second encryption streams pass; and multiplexing the packets of the clear stream and the critical packets of the first and second encryption streams to provide a partial dual encrypted stream (Unger: Table 1, Figure 6 and Para [0055] – [0068]: Examiner notes this requires the understanding of Unger reference on Table 1 and Figure 6 that presents the disclosure of partial dual-encryption, where each program packet is partially encrypted (i.e. only one out of nine packet streams as indicated in Table 1 identified as the critical packet) and when encryption is needed, the first and the second

encryptions are applied on the same critical packet (for the purpose of managing legacy and non-legacy system A and B respectively) prior to the multiplexing and transmissions. Therefore, Unger teaches not only critical packets are encrypted but also passing packets of the clear stream through a multiplexer (Unger: Figure 6 and Para [0058] Line 13 – 16), wherein the at least one critical packet is identified in the packets of the clear stream (Unger: Para [0080]), the critical packet of the clear stream drops and the scramble critical packets included in the first and second encryption streams pass (Unger: Table 1 and Figure 6 and Para [0058] Line 13 – 16: Examiner notes each packet stream is multiplexed and transmitted either in the form of clear stream or encryption stream as indicated in the Table 1 and thus when critical packet is identified the clear stream must drop and the scramble critical packets included in the first and second encryption streams must pass to the multiplex for transmission).

As per claim 2, Unger teaches remapping at least one PID value associated with the second encryption stream, whereby the scrambled packets of the first and second encryption streams each have a differing PID value (Unger: Figure 6 / Element 330).

As per claim 3, Unger teaches the aligning step comprises buffering each of the clear stream, the first encryption stream, and the second encryption stream (Unger: Figure 6 / Element 316 and Para [0065]).

As per claim 4, Unger teaches searching the clear stream for a reference packet; and comparing the reference packet with packets in the first encryption stream and the second encryption stream, wherein the packets associated with the clear stream passes and the packets associated with the first and second encryption streams drop until the packets associated with the first and second encryption stream match the reference packet (Unger: Table 1 and Figure 6 & Para [0088]).

As per claim 5, Unger teaches demultiplexing each of the clear stream and the first and second encryption streams to provide a plurality of programs (Unger: Figure 6 and Table 1: a demultiplexing entity must be needed so that the program ID 1 – 9 can be obtained from the A/V content as shown in Table 1).

As per claim 7, Unger teaches a partial dual-encryption device, comprising:

a port for providing a first encrypted stream from a first scrambler (Unger: Table 1 and Figure 6 / E318);

a port for providing a second encrypted stream from a second scrambler (Unger: Table 1 and Figure 6 / E324);

an aligner, identifier, and remapper (AIR) device coupled to each scrambler for providing a partial dual-encrypted stream (Unger: Table 1 and Figure 6 / E322 & Para [0053] – [0058]),

wherein a clear stream having at least one critical packet is provided to each scrambler and the AIR device, wherein the AIR device aligns packets of the clear

stream, the first encrypted stream, and the second encrypted stream, and wherein, upon identification of the at least one critical packet of the clear stream, provides the partial dual-encrypted stream including non-critical packets of the clear stream, a critical packet of the first encrypted stream, and a remapped critical packet of the second encrypted stream (Unger: Table 1 and Figure 6 & Para [0080], [0084]: Unger provides the partial dual-encrypted stream including non-critical packets of the clear stream (Unger: Table 1 – i.e. for example, the critical packet of program 1 is dual-encrypted (EA & EB) and multiplexed with non-critical packets of the clear stream from program 2 – 8 as shown in Table 1), a critical packet of the first encrypted stream, and a remapped critical packet of the second encrypted stream (Unger: Para [0084] Line 5 – 10: each packet upon multiplexing needs to be time-aligned prior to multiplexing and transmission).

As per claim 8, Unger teaches the AIR device comprising:

an aligner for aligning the packets associated with the clear stream, the first encrypted stream, and the second encrypted stream (Unger: Table 1 and Figure 6 and Para [0058]);

an identifier for identifying the at least one critical packet (Unger: Table 1 and Figure 7 / E 350); and

a remapper for remapping a packet identifier (PID) value associated with the second encrypted stream (Unger: Table 1 and Figure 7 / E 366),

the aligner comprising:

buffers for buffering the clear stream, the first encrypted stream, and the second encrypted stream (Unger: Para [0065]); and

a packet comparator for comparing a head packet associated with each stream in a buffer to determine when the buffered streams are aligned and subsequently releasing the streams for further processing (Unger: Figure 6 / E 316 and Para [0065], [0084]).

As per claim 9, Unger teaches the AIR device further comprising: switches responsive to the identifier for allowing one of the packets associated with the clear stream and the packets associated with the first and second encrypted streams to pass through to a multiplexer (Unger: Figure 3 / E 216, Para [0084], [0080] and Table 1).

As per claim 14, Unger teaches a method for transmitting an encrypted transport stream, the method comprising the steps of:

receiving a clear stream, the clear stream including a plurality of programs, each program comprising a plurality of packets each having a packet identifier (PID), wherein at least one of the plurality of packets is designated a critical packet (Unger: Table 1);

scrambling with a first scrambler the clear stream according to a first encryption method to provide a first encrypted stream (Unger: Figure 6);

aligning in time the clear stream and the first encrypted stream (Unger: Table 1 & Figure 6);

identifying the at least one critical packet associated with the clear stream (Unger: Para [0080]), wherein prior to identification, packets associated with the clear stream pass to a multiplexer (Unger: Table 1 and Figure 6 & Para [0058] Line 13 – 16) and encrypted packets associated with the first encrypted stream drop (Unger: Table 1 and Figure 6 and Para [0058] Line 13 – 16: Examiner notes each packet stream is multiplexed and transmitted either in the form of clear stream or encryption stream as indicated in the Table 1 and thus prior to identification of the critical packet, the encrypted packets associated with the first encrypted stream must drop), and wherein subsequent to identification (Unger: Para [0080]), packets associated with the clear stream pass to a second scrambler (Unger: Table 1 – i.e. this is because the critical packet of program 1 is dual-encrypted not only EA but also EB (Encryption for System B)) and encrypted packets associated with the first encrypted stream pass to the multiplexer, wherein the second scrambler provides a second encrypted stream to the multiplexer (Unger: Table 1 and Figure 6 / Element 322 and Para [0058] Line 13 – 16: Examiner notes each packet stream is multiplexed and transmitted either in the form of clear stream or encryption stream as indicated in the Table 1 and, for example, the critical packet of program 1 is dual-encrypted (EA & EB) and multiplexed with non-critical packets of the clear stream from program 2 – 8 as shown in Table 1) and multiplexing non-critical packets associated with the clear stream and the encrypted critical packets associated with the first and second encrypted streams to provide a partial dual-encrypted stream (Unger: Para [0084] Line 5 – 10: each packet upon multiplexing needs to be time-aligned prior to multiplexing and transmission).

As per claim 15, Unger teaches remapping the second encrypted stream to a new PID value (Unger: Figure 6 / E 330 and Table 1).

As per claim 16, Unger teaches a partial dual-encryption device, comprising:

a port for providing a first encrypted stream from a first scrambler (Unger: Figure 6 / E 318 and Table 1);

an aligner, identifier, and remapper (AIR) device coupled to the scrambler for providing a partial dual-encrypted stream (Unger: Figure 6 / E 316 & E 330 and Table 1),

wherein a clear stream having at least one critical packet is provided to the scrambler and the AIR device, wherein the AIR device aligns packets of the clear stream and the first encrypted stream, and identifies the at least one critical packet associated with the clear stream (Unger: Figure 6 / E 316 and Table 1), wherein, upon identification of the at least one critical packet, provides the at least one critical packet to a second scrambler, the second scrambler to provide a second encrypted stream (Unger: Figure 6 / E 324 and Table 1), and wherein the AIR device provides the partial dual-encrypted stream including non-critical packets associated with the clear stream and dually-encrypted critical packets associated with the first and second encrypted streams (Unger: Figure 6 / E 322 and Table 1: Please refer to the same rationale set forth above in rejecting claims 1, 7 and 14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 6, 10 – 13 and 18 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. (U.S. Patent 2003/0026423), in view of Faulkner et al. (U.S. Patent 5144669).

As per claim 6, Unger teaches aligning the time period and selecting the critical packets for encryption (Unger: Para [0084] and Figure 6). However, Unger does not disclose expressly a common program demultiplexed from each stream (which has already been encrypted) is provided to a common aligner, identifier, and remapper device.

Faulkner teaches scrambling / encryption should be completed prior to forming the time multiplexed data stream (Faulkner: Figure 4 / Element 44 & Element 46 and Column 2 Line 8 – 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Faulkner within the system of Unger because the delay caused by the scrambling process upon the predetermined time slot

during the TDMA process can thus be greatly reduced (Faulkner: Column 2 Line 8 – 10).

Accordingly, Unger as modified teaches demultiplexing each of the clear stream and the first and second encryption streams to provide a plurality of programs.

As per claim 10 and 18, Unger teaches:

a first demultiplexer coupled to the first scrambler to provide a plurality of first encrypted program streams (Unger: Figure 6 and Table 1: a demultiplexing entity must be needed so that the program ID 1 – 9 can be obtained from the A/V content as shown in Table 1);

a second demultiplexer coupled to the second scrambler to provide a plurality of second encrypted program streams (Unger: Figure 6 and Table 1: a demultiplexing entity must be needed so that the program ID 1 – 9 can be obtained from the A/V content as shown in Table 1); and

a third demultiplexer for providing a plurality of clear program streams (Unger: Figure 6 and Table 1: a demultiplexing entity must be needed so that the program ID 1 – 9 can be obtained from the A/V content as shown in Table 1),

However, Unger does not disclose expressly the demultiplexed program streams are provided to the AIR and processed as a common program.

Faulkner teaches scrambling / encryption should be completed prior to forming the time multiplexed data stream (Faulkner: Figure 4 / Element 44 & Element 46 and Column 2 Line 8 – 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Faulkner within the system of Unger because the delay caused by the scrambling process upon the predetermined time slot during the TDMA process can thus be greatly reduced (Faulkner: Column 2 Line 8 – 10).

Accordingly, Unger as modified teaches wherein the demultiplexed program streams are provided to the AIR and processed as a common program.

As per claim 11 and 19, Unger as modified teaches the AIR device includes a plurality of program AIR devices depending upon the number of common programs (Unger: Para [0090], [0065] / Line 11 – 14).

As per claim 12, Unger as modified teaches a common multiplexer for multiplexing the partial dual-encrypted stream from each of the plurality of program AIR devices (Unger: Para [0058] / Line 10 – 15).

As per claim 13 and 20, Unger as modified teaches the common multiplexer provides feedback to each of the program AIR devices that indicates availability of bandwidth for when the number of critical packets of the first encrypted stream and the remapped critical packets of the second encrypted stream can be increased (Unger: Para [0077] – [0078]).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 571-272-3788. The examiner can normally be reached on Monday-Friday 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Longbit Chai
Examiner
Art Unit 2131

LBC

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